taminants may go undetected. The control of pesticide contamination of ground water can be accomplished by avoiding the use of toxic pesticides in areas where they will be persistent and migrate or where the ground water is very shallow. However, to accomplish this goal while assuring vigorous agricultural production requires the following:

- Sufficient data on the environmental and toxicological characteristics of each of the many chemicals in use.
- Extensive information on pesticide use patterns.
- Adequate monitoring to enable early detection of any unforeseen problems.
- The development of alternative methods, including integrated pest management, changes in application timing and procedures, and more environmentally benign pesticides, which will promote cost-effective crop management that reduces the threat to ground water.

The following sections discuss these items and describe how some of the states have used these methods.

Large Numbers of Chemicals in Use Tens of thousands of pesticide formulations, containing about 600 different active ingredients, are registered with EPA. About 150 active ingredients account for 90 percent or more of the pounds of pesticides applied in most states. The usage patterns, the toxicological effects, and the chemical propensity to migrate into ground water vary tremendously among active ingredients. Although the number of pesticides that pose a threat to ground water is probably less than 100, it is a huge task for EPA and the state agencies to evaluate which pesticides can safely be used in which geographical locations and in which crop production systems. Federal funding for this task has not been adequate, and, as a result, regulatory decisions are often made without adequate information. It is clearly not cost-effective for each state to develop basic data on the toxicity and environmental fate of pesticides.

Data on Patterns of Use Because the use of pesticides is so diffuse and their fate uncertain, it is very important to know where and when potential contaminants have been applied. The only state that collects and maintains detailed information on pesticide usage is California. The data have been collected for only about 80 pesticides that have been designated as "restricted," primarily on the basis of toxicity rather than teachability. Unfortunately, the "restricted" list does not currently include many pesticides (especially herbicides) that have the chemical potential to leach into ground water. Pending legislation (AB 2021, 8/28/85) in California does set up a usage data collection program for leachable pesticides.